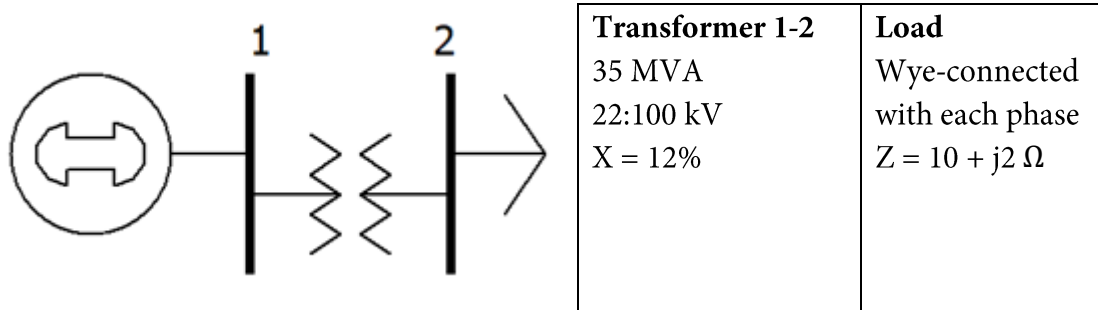


Name: _____ UIN: _____ Section: _____ Score: _____

For the following three-phase system:



1. Fill out the below table of system per-unit base values, starting with the two bases given.

	Bus 1	Bus 2
$S_{3\phi \text{ base}}$	100 MVA	100 MVA
$V_{LL \text{ base}}$	22 kV	100 kV
Z_{base}	4.84 Ω	100 Ω
I_{base}	2624 A	577 A

2. Calculate the per-unit impedance of the transformer on the system bases.

$$Z_{pu,sys} = Z_{pu,dev} \cdot \frac{S_{base,sys}}{S_{base,dev}} = 0.12 \cdot \frac{100}{35} = 0.343$$

3. Calculate the per-unit impedance of the load.

$$Z_{pu} = \frac{Z}{Z_{base}} = \frac{10 + j2 \Omega}{100\Omega} = 0.1 + j0.02$$